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```
=> s iodated(w)casein
             8 IODATED
         11501 CASEIN
L1           0 IODATED(W)CASEIN

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=> s iodated(w)casein
           150 IODATED
         57000 CASEIN
L2           3 IODATED(W)CASEIN

=> d l2 cbib,ab 1-3

L2   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2004 ACS on STN
1971:84630   Document No. 74:84630  Effect of iodated casein
     on milk productivity of suckling mares.  Swolinski, Jerzy; Lipinska,
     Hanna; Siudzinski, Stanislaw (Wyzsz. Szk. Roln., Poznan, Pol.).  Medycyna
     Weterynaryjna, 26(10), 628-9 (Polish) 1970.  CODEN: MDWTAG.  ISSN:
     0025-8628.
AB   Mares were fed daily, for the first 10 weeks of lactation, 19 g iodinated
     casein containing 2.5 thyroxine.  Weight losses were 9.75 and 37.13 kg in mares
     fed the control and supplemented diets, resp. Protein-bound iodine in
     blood sera in the exptl. group was 20.5, 53.5, and 14.6 μg  during the
     first week, after 10 days, and after 10 weeks, resp. Protein-bound iodine
     in blood of control animals was 1.6-3.7 μg .  Adding iodinated casein
     had no effect on milk productivity in mares or on body weight of foals.

L2   ANSWER 2 OF 3  CAPLUS  COPYRIGHT 2004 ACS on STN
1944:31823   Document No. 38:31823  Original Reference No. 38:4707h-i,4708a-b
     The effect of iodated casein (protomone) on milk and
     butterfat production and on the ascorbic acid content of the milk.  Van
     Landingham, A. H.; Henderson, H. O.; Weakley, Charles E.  Journal of Dairy
     Science, 27, 385-96 (Unavailable) 1944.  CODEN: JDSCAE.  ISSN: 0022-0302.
AB   The effect of feeding 15 g. of iodated casein daily to
     milking cows in the declining part of their first lactation was studied.
     Changes in milk production and in the composition of the milk were apparent
     after about 4 to 5 days of the iodated-casein feeding.
     Cows in the declining part of lactation showed an increase in milk
```

production of 5 to 20% and butterfat production of from 25 to 50%. During the first four weeks' feeding of **iodated casein** the fat content of the milk was increased by 0.47 to 0.98% above the fat content at the beginning of the experiment When **iodated casein** was discontinued for 4 weeks and then fed for a second 4-week period, the fat content was increased by 0.90 to 2.03% above the fat content of the milk at the beginning of the experiment There was only a slight increase in the solids-not-fat content of the milk. There was a decrease of 33% in ascorbic acid content of the milk. There was also an increase in respiration and in pulse rate and a small decrease in body weight

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
1913:20750 Document No. 7:20750 Original Reference No. 7:2995i,2996a Iron iodoparanucleate.. (Knoll & Co.). DE 258297 19120113 (Unavailable). APPLICATION: DE .
AB In the manufacture of iron iodoparanucleate, treating, in neutral reaction, either aqueous solns. of paranuclein acid with solns. of Fe salts and solns. of 1, or aqueous solns. of iodoparanuclein acid with solns. of Fe salts or Fe paranucleate. The latter reaction may also be carried out in acid or alkaline solution and then the mass neutralized. Further, the digest of casein may be treated with Fe-NH4-alum solution and with I solution or the digest of **iodated casein** with Fe-NH4-alum solution, and neutralizing.

```
=> s iodated(w)protein
          150 IODATED
      1641811 PROTEIN
L3          2 IODATED(W)PROTEIN
```

```
=> d l3 cbib,ab 1-2
```

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
1948:4264 Document No. 42:4264 Original Reference No. 42:936c-d Polarographic study of acid-insoluble fractions from iodoproteins. Simpson, G. K.; Johnston, A. G.; Traill, D. (Imperial Chem. Inds., Ltd., Stevenston, Ayrshire, UK). Biochemical Journal, 41, 181-4 (Unavailable) 1947. CODEN: BIJOAK. ISSN: 0264-6021.
AB An acid-insol. fraction (about 1%) is obtained when an **iodated protein** is hydrolyzed with baryta. It is stated that if all I present is thyroxine I, a value can be calculated which agrees well with the polarographic determination of the thyroxine of this fraction.

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
1934:34488 Document No. 28:34488 Original Reference No. 28:4127g-i Immunologic study of the benzoyl derivatives of proteins. Adant, M. Arch. intern. med. exptl., 9, 67-86 (Unavailable) 1934.
AB cf. C. A. 27, 532. Serum proteins which are completely benzoylated are not antigenic. Those which are partially benzoylated are antigenic but appear to have no species specificity. Benzoylated gelatin is antigenic and is precipitated by benzoylated protein antiserums. Proteins which have been iodated before benzoylation are precipitated by **iodated protein** antiserum or by benzoylated protein antiserum. Completely benzoylated proteins are insol.; the partially benzoylated proteins described are soluble at pH 7.

```
=> s iodated(w)lactoglobulin
          150 IODATED
         5769 LACTOGLOBULIN
L4          0 IODATED(W)LACTOGLOBULIN
```

```
=> s iodated(w)castin
          150 IODATED
           17 CASTIN
```

```
L5            0 IODATED(W)CASTIN

=> s iodine(w)deficency and iodine(w)fortification
        124003 IODINE
            27 DEFICENCY
             0 IODINE(W)DEFICENCY
        124003 IODINE
          2737 FORTIFICATION
            12 IODINE(W)FORTIFICATION
L6            0 IODINE(W)DEFICENCY AND IODINE(W)FORTIFICATION

=> s iodine and fortification
        124003 IODINE
          2737 FORTIFICATION
L7           49 IODINE AND FORTIFICATION

=> d l7 cbib,ab 1-49

L7   ANSWER 1 OF 49  CAPLUS  COPYRIGHT 2004 ACS on STN
2004:469615  Selenium and iodine intakes and status in New Zealand
     and Australia.  Thomson, Christine D. (Department of Human Nutrition,
     University of Otago, Dunedin, N. Z.).  British Journal of Nutrition,
     91(5), 661-672 (English) 2004.  CODEN: BJNUAV.  ISSN: 0007-1145.
     Publisher: CABI Publishing.
AB   Most New Zealand soils contain relatively low concns. of the anionic trace
     elements F, I and Se.  Some areas of Australia also have a history of I
     deficiency.  In view of current interest in establishing nutrient reference
     intakes for Se and I in New Zealand and Australia, it is timely to review
     current understanding of the intakes and status of these two elements.  In
     spite of a recent increase in Se status, the status of New Zealanders
     remains low compared with populations of many other countries and may
     still be considered marginal, although the clin. consequences of the
     marginal Se status are unclear.  There are no recent reports of blood Se
     levels in Australia, but earlier reports indicate that they were generally
     greater than those of New Zealanders.  Similarly, the consequences of
     decreasing I status in Australia and New Zealand are unclear.  Mild I
     deficiency in New Zealand has resulted in enlarged thyroid glands
     indicating an increased risk of goitre.  Currently there is little
     evidence, however, of any associated clin. disease.  Public health
     recommendations to reduce salt intake, together with the reduction in I
     content of dairy products, are likely to result in further decreases in
     the I status of New Zealand and Australian residents.  Some action is
     needed to prevent this decline and it may be necessary to consider other
     means of fortification than iodized salt.  The consequences of
     possible interactions between Se and I in human nutrition are also unclear
     and no practical recommendations can be made.

L7   ANSWER 2 OF 49  CAPLUS  COPYRIGHT 2004 ACS on STN
2004:125735  Document No. 141:22723  Metabolism of iodine in women
     during pregnancy and breast-feeding and in their newborns.  Wei, Houming;
     Wang, Jiyao; Huang, Wei; Wang, Xiaohua; Luo, Ruorong; Wei, Ruofei
     (Shenzhen Center for Disease Prevention and Control, Shenzhen, 518020,
     Peop. Rep. China).  Zhongguo Gonggong Weisheng, 18(12), 1468-1469
     (Chinese) 2002.  CODEN: ZGWEE3.  ISSN: 1001-0580.  Publisher: Zhongguo
     Gonggong Weisheng Zazhishe.
AB   Samples of table salt used in the kitchen and urine were collected from
     women at 12-14 (n=130) and 18-22 (n=96) wk of pregnancy, from mothers
     (n=120) and newborns (n=120) during breast feeding period, and from
     nonpregnant women (n=120).  Urinary iodine was determined by the
     As(III)-Ce4+ catalytic spectrophotometric method.  The urinary
     iodine levels in early pregnant women decreased rapidly from
     nonpregnant levels (291.0 to 171.1 μg/L).  Urinary iodine
     contents <100 μg/L were found in 13.3% early pregnant women.  Urinary
     iodine levels increased to 718.0 μg/L during breast feeding.
     Urinary iodine contents >1000 μg/L were found in 21%
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lactating women and urinary **iodine** contents of newborns >800 μg/L were found in 41.0%. Correlation was found between milk **iodine** in mothers and urinary **iodine** of newborns. These changes were less pronounced in women living in rural areas. The salt **iodine fortification** level should be decreased to prevent risk of high **iodine** intakes.

L7 ANSWER 3 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2004:43485 Supplements and food **fortification** - when and where?. Leitzmann, Claus (Institute of Nutrition Science, University of Giessen, Giessen, D-35392, Germany). Forum of Nutrition, 56(Modern Aspects of Nutrition), 363-365 (English) 2003. CODEN: FNOUA6. ISSN: 1660-0347. Publisher: S. Karger AG.

AB Various aspects of food supplementation and food **fortification** are discussed. The great variety of food available in most industrialized countries supplies all the nutrients required in sufficient amts., as studies show with population groups choosing wholesome food. Exceptions are people who live in certain regions of the world where for example **iodine** and selenium are in low concns. in the soil. Supplements may be helpful or temporarily necessary for groups at risk, such as certain children, certain pregnant and lactating women, certain very old and certain sick people.

L7 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:931268 Document No. 139:380486 Mineral **fortification** systems for adding minerals to bottled, potable liquids. Daniels, Jacqueline Ann; Mehansho, Haile; Nunes, Raul Victorino; Miller, Christopher Miles; Weaver, Kerry Lloyd (The Procter & Gamble Company, USA). PCT Int. Appl. WO 2003097478 A1 20031127, 37 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-US15423 20030515. PRIORITY: US 2002-150328 20020516; US 2002-247190 20020919; US 2003-367006 20030214.

AB A mineral-**fortification** system that has a bottle cap, a pouch and a pouch opener. A powder is contained within the pouch, and the powder contains at least one mineral and a redox modulating compound When the cap is secured onto the opening of a bottle containing a liquid and when the pouch opener is activated, the powder is released from the pouch and mixes with the liquid to form a mineral fortified liquid composition that is fortified with at least one mineral and has a pH between about 2.5 and 9.5. Moreover, the mineral fortified liquid composition has a redox potential that satisfies the following equation: $0 \geq RP - (A - B\ pH)$. In this equation RP is the redox potential in millivolts of the mineral-containing liquid composition, pH is the pH of the mineral-containing liquid composition, A is 400 and B is 20. The mineral is preferably selected from calcium, iron, zinc, copper, manganese, **iodine**, magnesium, and mixts. of these. Moreover, the mineral-fortified liquid composition may preferably be substantially free of flavor or sweetener compds. Even more preferably, the liquid composition has no metallic taste or after-taste, a Hunter colorimetric 'b' reading of less than 5.0, and an NTU turbidity value of less than 5.0. The mineral-fortified liquid composition may optionally contain other nutrients and vitamins, for example, vitamin A, vitamin C, vitamin E, niacin, thiamin, vitamin B6, vitamin B2, vitamin B 12, folic acid, selenium, pantothenic acid, and **iodine**.

L7 ANSWER 5 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:674633 Document No. 140:93067 Micronutrient deficiencies in developing and affluent countries. Diaz, J. R.; de las Cagigas, A.; Rodriguez, R. (Instituto de Nutricion e Higiene de los Alimentos, Havana, Cuba). European Journal of Clinical Nutrition, 57(Suppl. 1), S70-S72 (English) 2003. CODEN: EJCNEQ. ISSN: 0954-3007. Publisher: Nature Publishing Group.

AB A review. Micronutrient deficiencies (hidden hunger) are determining and aggravating factors for health status and quality of life. Three nutritional problems with serious consequences are deficiencies of iron, vitamin A, and **iodine.** In todays world, iron deficiency anemia may affect 2 billions of people, mostly women and children. Blindness due to vitamin A deficiency may affect 2.8 millions children <5 yr of age. **Iodine** deficiency disorders may affect 740 million people. Cuba uses various programs to deal with these micronutrient deficiencies. Dietary diversification, **fortification** of foods, and supplementation with pharmaceutical prepns. are among the Cuban responses to these deficiencies. Urban agriculture is one strategy to increase dietary diversity by increasing both the availability and consumption of vegetables and fruits. Food **fortification** takes many forms in Cuba today and various supplementation programs are used. The most common supplemental program in Cuba is the prenatal program which provides iron, ascorbic acid, vitamin A, and folic acid. Iodination program currently covers >90% of the salt (NaCl) for human consumption. Research data from Cuba show that vitamin A deficiency is nonexistent in children up to 7 yr of age. Foods and prepns. for these programs are provided free or at low prices.

L7 ANSWER 6 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:655526 Document No. 139:178972 Dual **fortification** of salt with **iodine** and encapsulated iron compounds: Stability and acceptability testing in Morocco and Cote d'ivoire. Wegmueller, R.; Zimmermann, M. B.; Hurrell, R. F. (Human Nutrition Laboratory, Inst. for Food Science and Nutrition, Swiss Federal Inst. of Technology, Zurich, Switz.). Journal of Food Science, 68(6), 2129-2135 (English) 2003. CODEN: JFDSAZ. ISSN: 0022-1147. Publisher: Institute of Food Technologists.

AB The stability of local salt dual fortified with **iodine** and 19 iron compds. (encapsulated compared to nonencapsulated sulfate, fumarate, pyrophosphate, and elemental iron) was tested in Morocco and Cote d'Ivoire. Color and **iodine** content were measured after storage for 1, 2, 4, and 6 mo. Color acceptability was judged by standardized interviews. For most compds., encapsulation did not protect against adverse sensory changes and **iodine** losses. However, 2 forms of ferric pyrophosphate, 1 small particle size (approx. 2.5 μm) and 1 micronized (approx. 0.5 μm), performed well and be useful in salt **fortification.** Improvements in current encapsulation techniques are needed to allow encapsulated iron to be used in salt **fortification.**

L7 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:416047 Document No. 139:179195 Vitamins and minerals: A model for safe addition to foods. Flynn, Albert; Moreiras, Olga; Stehle, Peter; Fletcher, Reginald J.; Muller, Detlef J. G.; Rolland, Valerie (Department of Food & Nutritional Sciences, University College Cork, Cork, Ire.). European Journal of Nutrition, 42(2), 118-130 (English) 2003. CODEN: EJNUFZ. ISSN: 1436-6207. Publisher: Steinkopff Verlag.

AB A review. Significant subgroups in most European populations have dietary intakes below nationally recommended levels for several vitamins, minerals, and trace elements, placing individuals at risk of suboptimal intakes of important vitamins and minerals. Voluntary addition of micronutrients to the appropriate foods may help address the risks associated with low micronutrient intakes. Concerns need to be addressed regarding the potential for unacceptably high intakes, especially in the people consuming very large amts. of food. A model estimating the levels of each micronutrient that can be added safely to foods is presented. The model was developed

based on the critical factors which determine the risk of unacceptably high intakes for each micronutrient at high levels of food/energy intakes. These included Tolerable Upper Intake Levels (UL), high micronutrient intakes in Europe at the 95th percentile intake for each nutrient, proportions of fortified foods in the diets of individuals at the 95th percentile for energy intakes, proportions of foods to which micronutrients could practically be added, and range of ests. for the fractions of foods which might be actually fortified for each nutrient. A maximum level was set up for each micronutrient per typical serving or 100 kcal portion. The outputs of the model were then compared against a recent model developed by AFSSA, based on food intake data in France. Three categories of micronutrients were identified, in which micronutrients could be added safely to foods at levels (per serving of 100 kcal): greater than 1 European Commission Recommended Daily Intake (EC RDA) for vitamin B12, vitamin C, vitamin E, riboflavin, pantothenic acid, niacin and thiamin; between 50 and 100% of the EC RDA for vitamin B6, vitamin D, folic acid, biotin, copper, **iodine** and selenium; and between 10 and 40% of the EC RDA for iron, zinc, calcium, phosphorus and magnesium. A 4th category consisted of retinol, for which high end intake levels are close to UL values for some population subgroups in Europe and thus require further consideration. Thus, a wide range of vitamins and minerals can be added safely to foods at nutritionally important levels in the current diets of Europeans.

L7 ANSWER 8 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:367897 Scientific research: Essential, but is it enough to combat world food insecurities?. Underwood, Barbara A. (Scholar-in-Residence, Food and Nutrition Board, Institute of Medicine, National Academies, Washington, DC, 20001, USA). Journal of Nutrition, 133(5S-1), 1434S-1437S (English) 2003. CODEN: JONUAI. ISSN: 0022-3166. Publisher: American Society for Nutritional Sciences.

AB Food and nutrition insecurity, which affects an estimated 815 million households (the majority in developing countries), is in large part due to micronutrient deficiencies. The magnitude of the problem, causes, consequences and cost-effective solns. elucidated by scientists over the last few decades changed perceptions and drew political commitments in the 1990s to alleviate micronutrient deficiencies. Prevalence was reduced for **iodine** and vitamin A deficiency disorders largely through mandated universal **fortification** of salt with **iodine** and wide distribution of vitamin A supplements associated with immunization campaigns. Less progress was achieved in the control of iron deficiency. The challenge now is to move forward with interventions that are sustainable within the context of vulnerable communities, which possibly include applied biotechnol. to enhance yields and micronutrient contents of staple foods. Scientific progress and political commitment are key factors, but consumer and public acceptance is key to sustainable progress. Achieving public confidence requires increased partnerships among scientists, policymakers, community leaders and consumers in the decision-making processes.

L7 ANSWER 9 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:90336 Document No. 138:286603 Dual **fortification** of salt with **iodine** and microencapsulated iron: A randomized, double-blind, controlled trial in Moroccan schoolchildren. Zimmermann, Michael B.; Zeder, Christophe; Chaouki, Noureddine; Saad, Amina; Torresani, Toni; Hurrell, Richard F. (Human Nutrition Laboratory, Swiss Federal Institute of Technology, Zurich, Switz.). American Journal of Clinical Nutrition, 77(2), 425-432 (English) 2003. CODEN: AJCNAC. ISSN: 0002-9165. Publisher: American Society for Clinical Nutrition.

AB In many developing countries, children are at high risk of both goiter and iron deficiency anemia. In a series of studies in northern Morocco, we developed and tested a dual-fortified salt (DFS) containing **iodine** and microencapsulated iron. To establish the DFS **fortification** concentration, we measured salt intake by 3-d weighed food records and estimated iron

bioavailability from the local diet by using published algorithms. We then formulated a DFS containing 25 μg **iodine**/g salt (as potassium iodide) and 1 mg iron/g salt (as ferrous sulfate hydrate encapsulated with partially hydrogenated vegetable oil). After storage and acceptability trials, we compared the efficacy of the DFS to that of iodized salt in a 9-mo, randomized, double-blind trial in **iodine** -deficient, 6-15-y-old children (n = 377). Mean salt intake in school-age children was 7-12 g/d, and estimated iron bioavailability from the local diet was 0.4-4.3%. After storage for 20 wk, the DFS and iodized salt were not significantly different in **iodine** content, and color stability was acceptable when the compds. were added to local meals. During the efficacy trial, urinary **iodine** concns. and thyroid vols. improved significantly ($P < 0.001$ and < 0.05, resp.) from baseline in both groups. At 40 wk, mean Hb concns. in the DFS group had increased by 14 g/L ($P < 0.01$), and serum ferritin, transferrin receptor, and zinc protoporphyrin concns. were significantly better ($P < 0.05$) in the DFS group than in the iodized salt group. The prevalence of iron deficiency anemia in the DFS group decreased from 35% at baseline to 8% at 40 wk ($P < 0.001$). A DFS containing **iodine** and encapsulated iron can be an effective **fortification** strategy.

L7 ANSWER 10 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2003:12648 Document No. 138:186911 Addition of microencapsulated iron to iodized salt improves the efficacy of **iodine** in goitrous, iron-deficient children: A randomized, double-blind, controlled trial. Zimmermann, Michael B.; Zeder, Christophe; Chaouki, Nourredine; Torresani, Toni; Saad, Amina; Hurrell, Richard F. (The Human Nutrition Laboratory, Swiss Federal Institute of Technology, Zurich, Switz.). European Journal of Endocrinology, 147(6), 747-753 (English) 2002. CODEN: EJOEEP. ISSN: 0804-4643. Publisher: BioScientifica Ltd..

AB In many developing countries, children are at high risk for both goiter and anemia. Iron (Fe) deficiency adversely effects thyroid metabolism and reduces efficacy of **iodine** prophylaxis in areas of endemic goiter. The study aim was to determine if co-**fortification** of iodized salt with Fe would improve efficacy of the **iodine** in goitrous children with a high prevalence of anemia. In a 9-mo, randomized, double-blind trial, 6-15 yr-old children (n = 377) were given iodized salt (25 μg **iodine**/g salt) or dual-fortified salt with **iodine** (25 μg **iodine**/g salt) and Fe (1 mg Fe/g salt, as ferrous sulfate microencapsulated with partially hydrogenated vegetable oil). In the dual-fortified salt group, Hb and Fe status improved significantly compared with the iodized salt group ($P < 0.05$). At 40 wk, the mean decrease in thyroid volume measured by ultrasound in the dual-fortified salt group (- 38%) was twice that of the iodized salt group (- 18%) ($P < 0.01$). Compared with the iodized salt group, serum thyroxine was significantly increased ($P < 0.05$) and the prevalence of hypothyroidism and goiter decreased ($P < 0.01$) in the dual-fortified salt group. Addition of encapsulated Fe to iodized salt improves the efficacy of **iodine** in goitrous children with a high prevalence of anemia.

L7 ANSWER 11 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2002:973885 Document No. 138:152678 Micronutrient restoration and **fortification**: communicating change, benefits and risks. Darnton-Hill, Ian; Bloem, Martin W.; de Benoist, Bruno; Brown, Lynn R. (Noncommunicable Diseases Prevention and Health Promotion, World Health Organization, Geneva, Switz.). Asia Pacific Journal of Clinical Nutrition, 11(Suppl.), S184-S196 (English) 2002. CODEN: APJNFQ. ISSN: 0964-7058. Publisher: Blackwell Publishing Asia Pty Ltd..

AB A review. Food **fortification** has had significant roles in the current nutritional health and well-being of populations in industrialized countries for over 70 yr. A relative lack of a concentrated food processing chain, less developed com. markets, and relatively low consumer awareness and demands have hindered the same application of the intervention in the transitional, and even more, in the least developed countries until quite recently. This paper briefly reviews **fortification** of foods

with micronutrients in advantaged (industrialized), transitional (developing), and least developed countries, including reference to biofortification, and examines some of the public health issues involved. There are different needs and challenges in getting this technol. accepted and making it sustainable. Primary constraints in reaching poor target populations are adequate availability, accessibility, and quality assurance/quality control. The issues of risk and benefits and their communication are also discussed. Despite the problems there has been an enormous increase in **fortification** programs over the last couple of decades in developing countries. Along with dietary diversification, supplementation and related public health and private sector interventions, this has resulted in considerable progress in decreasing the prevalence of vitamin A and **iodine** deficiencies, but much less so with iron, even as zinc and folic acid deficiencies have emerged as significant public health problems. Food **fortification** based on sound principles and supported by clear policies and regulations will play an increasingly large role in the progress towards the prevention and control of micronutrient malnutrition. Success and sustainability require clear communication of the small risks involved and the substantial benefits, especially in populations with significant levels of micronutrient malnutrition, as a complementary approach with other public health measures, in decreasing the prevalence of deficiencies and their health consequences.

L7 ANSWER 12 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2002:907737 Document No. 138:136277 Delivering micronutrients via food **fortification.** Mannar, M. G. Venkatesh (The Micronutrient Initiative, Ottawa, K1R 7Z1, Can.). Journal of Crop Production, 6(1/2), 339-363 (English) 2002. CODEN: JCPRF8. ISSN: 1092-678X. Publisher: Food Products Press.

AB A review. **Fortification** of foods has been a successful strategy for the delivery of micronutrients in developed countries. **Fortification** requires modest investments, is cost effective, can build on existing technologies facilitated by the globalization of the food industry, supports other public health strategies to combat micronutrient deficiency induced malnutrition, and enhances sustainability. In developing countries, the success of food **fortification** has been encouraging, but varied, due to the decentralized food processing process and issues of quality control. Food **fortification** is an integral part of any food systems strategy and the choice of the appropriate food vehicle and its fortificant can be tailored to meet the local needs. This article discusses various aspects of food **fortification**: existing and future opportunities for food **fortification**, cost effectiveness, food **fortification** success stories with examples from different regions, and impact on nutritional status of humans.

L7 ANSWER 13 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2002:537895 Document No. 137:108686 **Fortification** strategies to meet micronutrient needs: successes and failures. Darnton-Hill, Ian; Nalubola, Ritu (World Health Organization, Geneva, CH-1211, Switz.). Proceedings of the Nutrition Society, 61(2), 231-241 (English) 2002. CODEN: PNUSA4. ISSN: 0029-6651. Publisher: CABI Publishing.

AB A review. Food **fortification** is likely to have played an important role in the current nutritional health and well-being of populations in industrialized countries. Starting in the early part of the 20th century, **fortification** was used to target specific health conditions: goiter with iodized salt; rickets with vitamin D-fortified milk; beriberi, pellagra and anemia with B-vitamins and Fe-enriched cereals; more recently, in the USA, risk of pregnancy affected by neural-tube defects with folic acid-fortified cereals. A relative lack of appropriate centrally-processed food vehicles, less-developed com. markets and relatively low consumer awareness and demand, means it has taken about another 50 yr for **fortification** to be seen as a viable option for the less-developed countries. The present paper reviews

selected **fortification** initiatives in developing countries to identify different factors that contributed to their successful implementation, as well as the challenges that continually threaten the future of these programs. Ultimately, the long-term sustainability of **fortification** programs is ensured when consumers are willing and able to bear the addnl. cost of fortified foods. There has been an enormous increase in **fortification** programs over the last couple of decades in developing countries. Considerable progress has been made in reducing vitamin A and I deficiencies, although less so with Fe, even as Zn and folic acid deficiencies are emerging as important public health problems. Food **fortification** based on sound principles and supported by clear policies and regulations can play an increasingly large role in this progress towards prevention and control of micronutrient malnutrition.

L7 ANSWER 14 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2002:438624 Document No. 138:54823 Microencapsulation for **iodine** stability in salt fortified with ferrous fumarate and potassium iodide. Diosady, L. L.; Alberti, J. O.; Venkatesh Mannar, M. G. (Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, M5S 3E1, Can.). Food Research International, 35(7), 635-642 (English) 2002. CODEN: FORIEU. ISSN: 0963-9969. Publisher: Elsevier Science Ltd..

AB Potassium iodide and potassium iodate were encapsulated in modified starches, gelatin, sodium hexametaphosphate and purified sodium chloride by spray drying and fluidized bed drying to produce microcapsules containing 0.3 to 2% **iodine.** Salt mixed with ferrous fumarate or ferrous sulfate, and encapsulated **iodine** was then stored at high temperature and high humidity. The most stable combination, containing 50 mg **iodine** and 1000 mg iron per kg salt, retained more than 75% of the added **iodine** for a year at 40°, 100% RH. Double-fortified salt prepared using this approach has been successfully tested in large-scale field trials. The results will be published after completion of data anal.

L7 ANSWER 15 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2002:280028 Eradication of iron deficiency anemia through food **fortification**: the role of the private sector. Mehansho, Haile (Nutrition Science Institute, The Procter and Gamble Co., Cincinnati, OH, 45252, USA). Journal of Nutrition, 132(4S), 831S-833S (English) 2002. CODEN: JONUAI. ISSN: 0022-3166. Publisher: American Society for Nutritional Sciences.

AB Delivering iron fortified foods that provide meaningful levels of bioavailable iron without altering the accepted appearance and taste of the product presents multiple challenges. Issues relating to food technol., product formulation, acceptance and efficacy evaluation, marketing and quality control must all be addressed. Procter & Gamble Company has developed a unique technol. that stabilizes iron in an aqueous system. Utilizing this technol., a fortified powder drink has been developed that is easy to distribute, store and use and that delivers 20-30% of the U. S. RDA for iron, as well as significant amts. of vitamin A, **iodine**, zinc and vitamin C in a single serving. Acceptance, bioavailability and effectiveness trials have all produced pos. results. This type of fortified product can contribute to alieviating iron deficiency but requires scaling up, packaging, quality control and distribution through normal trade channels and public institutions to have a sustainable impact. To be effective, a well-planned communications campaign should also accompany any major iron **fortification** program. Eradication of iron deficiency anemia can be done but requires a holistic approach that addresses multiple barriers and leverages the untapped expertise and strength of the alliance between public and private sectors.

L7 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2001:494138 Document No. 135:210376 Prospects of **fortification** of

salt with iron and **iodine**. Sivakumar, Bhattiprolu; Brahmam, G. N. V.; Nair, K. Madhavan; Ranganathan, S.; Rao, M. Vishnuvardhan; Vijayaraghavan, K.; Krishnaswamy, Kamala (National Institute of Nutrition, Hyderabad, 500 007, India). British Journal of Nutrition, 85(Suppl. 2), S167-S173 (English) 2001. CODEN: BJNUAV. ISSN: 0007-1145. Publisher: CABI Publishing.

AB A review with 27 refs. **Fortification** of salt with iron has been developed by the National Institute of Nutrition (NIN) as a strategy for the control of iron deficiency anemia (IDA) in India, similar to iodization of salt for control of **iodine** deficiency disorders (IDD). Stability of the iron fortified salt (IFS), its bioavailability and organoleptic evaluation of food items containing the IFS have been demonstrated. Acceptability and effectiveness of the IFS in school children and in multicentric community trials have been demonstrated. With the introduction of universal iodization of salt as a national policy in 1988, NIN has developed a formulation for double **fortification** (DFS) of salt with **iodine** and iron. The stability of the nutrients under laboratory conditions along with their bioavailability were found to be good but varying with the quality of salt used. The DFS has been evaluated in controlled trials in tribal communities and in residential school children. The findings of these studies are discussed. Overall, in these trials, DFS effectively controlled **iodine** deficiency but a clear impact on reducing anemia was not demonstrated. In residential schoolchildren, increased urinary excretion of **iodine** as well as reduced anemia were observed The quality of salt has been found to be an important determinant of the stability of **iodine** in DFS. Further evaluation of this potentially important intervention is in progress.

L7 ANSWER 17 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2001:221893 Document No. 134:236673 Fortified coffee drink. Atkinson, Judith R.; Deis, David A.; Marchio, Amy L. (Abbott Laboratories, USA). U.S. US 6207203 B1 20010327, 9 pp. (English). CODEN: USXXAM. APPLICATION: US 1998-124886 19980730.

AB A powder composition provides a low fat vitamin and mineral fortified coffee drink when reconstituted with water. The nutritional composition in the form of a soluble powder contains an instant coffee component, a protein component, a vitamin/mineral component providing at least 25% of U.S. RDI per 8 oz serving, and a carbohydrate component in about 140 cal per 8 oz serving. Thus, a nonfat powdered vanilla flavored coffee mix includes nonfat dry milk 263, granular sugar 150, instant coffee 14, vanilla flavor 9.5, cocoa powder 7.6, magnesium carbonate 3.3, vitamin/mineral premix 2, and coffee mocha flavor 1.3 kg and carrageenan 862 g.

L7 ANSWER 18 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2001:212019 Document No. 134:294975 Nutritional research in india and challenges for the new millennium. Krishnaswamy, Kamala; Bhaskaram, P. (National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, 500 007, India). Nutrition Research (New York, NY, United States), 21(1/2), 441-452 (English) 2001. CODEN: NTRSDC. ISSN: 0271-5317. Publisher: Elsevier Science Inc..

AB A review with 69 refs. Nutritional research in India has made several advances over the years and contributed significantly to the improvement in the nutritional status of the Indian population and also has made a niche in the global nutritional research scenario. Nutritional research in India has been mainly public health oriented and thus is immediately relevant to the national needs. Several solns. on laboratory based research have led to strategies and national programs for prevention and control of malnutrition. Several policies and programs have been evolved to control nutritional deficiencies and their consequences in the vulnerable groups. Formulation of National program for prevention of blindness, National anemia prophylaxis program for pregnant women, policy of immunizing undernourished children, development of **fortification** of salt with iron and iron & **iodine**, lipid research helping import and export policies for edible oils are some of the outstanding achievements

made in India. "Integrated Child Development Services (ICDS)" which is a comprehensive, multipronged scheme for reducing the burden of malnutrition is one of its kind in the world. Integration of various programs with primary health care system along with continuous surveillance and update of dietary intakes and nutritional status of the population are major activities and are unique to this country.

L7 ANSWER 19 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2000:511624 Document No. 133:251605 Sodium hexametaphosphate (SHMP) as a stabilizer of double fortified (iron and **iodine**) salt does not alter the calcium and phosphorous homeostasis. Nair, K. Madhavan; Brahmam, G. N. V.; Laxmaiah, A.; Reddy, Ch. Gal; Rao, M. Vishnuvardhana; Ranganathan, S.; Vijayaraghavan, K.; Sivakumar, B.; Krishnaswamy, Kamala (National Institute of Nutrition (ICMR), Hyderabad, 500 007, India). World Salt Symposium, 8th, The Hague, Netherlands, May 7-11, 2000, Volume 2, 1253-1254. Editor(s): Geertman, Rob M. Elsevier Science B.V.: Amsterdam, Neth. (English) 2000. CODEN: 69AELQ.
AB A study was made of the effect of SHMP in fortified salt on calcium and phosphorous in the urine and on calcium in the serum of school children. Daily consumption of the salt for 18 mo was not linked to any imbalance in calcium and phosphorus.

L7 ANSWER 20 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2000:511596 Document No. 133:295507 Micronutrient laboratory proficiency testing to achieve sustainability of the quality of monitoring data: The Andean countries experience. Vanhassel, Hans (Subregional Andean Programme for the Control of Micronutrient Deficiency Disorders, UNICEF, Ecuador). World Salt Symposium, 8th, The Hague, Netherlands, May 7-11, 2000, Volume 2, 1083-1087. Editor(s): Geertman, Rob M. Elsevier Science B.V.: Amsterdam, Neth. (English) 2000. CODEN: 69AELQ.
AB The success of food **fortification** and other public health programs critically depends on the reliability of monitoring data generated in food chemical labs. In 1997 the Subregional Andean Micronutrient Deficiency Control Program of UNICEF started a proficiency testing program for **iodine** determination in cooking salt aimed at private and public labs. in Bolivia, Colombia, Ecuador, Paraguay, Peru, and Venezuela. The results allowed to classify 4 types of labs., each associated with specific interventions to achieve sustained reliability of their anal. results. The type 1 laboratory was highly reliable. The type 2 showed sporadic weak proficiency related to the absence of formal quality assurance systems. The type 3 was a weak performer in need of improvement. The type 4 was not able to improve its weak proficiency and drastic changes in management policy were needed. The testing model was able to identify and resolve major laboratory problems that could have adverse impact on adequate salt iodization, to achieve progress in the standardization of anal. methods, and to optimize resources for laboratory support. The long-term impact was found in the demystification of quality management among laboratory staff that started implementing formal quality assurance programs that conform to the requirements of ISO Guide 25. The sustainability of the laboratory proficiency testing program was enhanced by its
decentralization to a type 1 laboratory in each Andean country.

L7 ANSWER 21 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
2000:511580 Document No. 133:159513 The role of salt in global elimination of lymphatic filariasis. Houston, R.; Lapointe, M.; Lammie, P.; Freeman, A.; Addiss, D. (Bozeman, MT, 59715, USA). World Salt Symposium, 8th, The Hague, Netherlands, May 7-11, 2000, Volume 2, 993-998. Editor(s): Geertman, Rob M. Elsevier Science B.V.: Amsterdam, Neth. (English) 2000. CODEN: 69AELQ.
AB A review with 22 refs. **Fortification** of salt with the medication diethylcarbamazine (DEC) may prove to be a critical intervention for the elimination of a devastating mosquito-transmitted parasitic disease of the tropics caused by a small thread-like worm (filaria). Lymphatic filariasis, which causes hydrocele and the gross deformity of

the legs called "elephantiasis", is ranked as the second leading cause of disability worldwide [1]. The recent development of new diagnostic and therapeutic tools has led to the recognition that lymphatic filariasis, along with other diseases such as polio, can be eliminated. Currently, the recommended strategy for achieving this goal is annual treatment of everyone in affected communities once a year with DEC or other effective drugs. This mass treatment with DEC reduces the levels of parasite in the blood (microfilaremia) to the point where mosquitoes can no longer spread it from person to person. Because of the difficulties in distributing DEC tablets, particularly in urban areas, DEC salt has attracted increased interest among filariasis control officials in recent years. DEC is a good fortifier because it is tasteless, odorless, and extremely heat-stable. As an adjunct to mass distribution of DEC tablets, DEC salt has been used extensively in China, where transmission of the parasite has been essentially eliminated. DEC salt has also been studied extensively in India, Brazil, Haiti and Tanzania, with these studies confirming its safety and cost-effectiveness [2]. DEC salt delivers a very low dose of DEC (usually 0.2-0.4 % weight/weight) and is substituted for normal household salt for a min. of 6-12 mo, with close monitoring for the following 4-5 yr. For the most common strain of filariasis, responsible for 90% of human lymphatic filariasis worldwide, no side effects have been reported from this intervention, and with the dramatic reduction in microfilaria in the blood, the transmission cycle is broken. Outside of China, DEC salt has not been widely accepted primarily because of the limited experience of public health professionals in working with the salt industry. In the past decade, the global effort to eliminate **iodine** deficiency through salt iodization has been extraordinarily successful. Most countries now report dramatic increases in household use of iodized salt and rapid redns. in **iodine** deficiency prevalence. UNICEF ests. that 66% of all the edible salt in the world is now iodized [3]. This dramatic success of salt iodization is the result of a dynamic, pos. collaboration between the salt industry and the public health community. In light of the recently announced goal of the World Health Organization to eliminate lymphatic filariasis globally, it is now time to build on the success of salt iodization by fortifying salt in filariasis-endemic areas with both DEC and potassium iodate. This can be easily done by adding a measured amount of DEC to the potassium iodate premix. In many areas of the world, salt **fortification** is likely to be the crucial strategy for successfully eliminating the scourge of lymphatic filariasis from the face of the earth.

L7 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2000:511576 Document No. 133:251445 Double **fortification** of salt with iron and **iodine.** Diosady, L. L.; Mannar, M. G. Venkatesh (Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, M5S 3E5, Can.). World Salt Symposium, 8th, The Hague, Netherlands, May 7-11, 2000, Volume 2, 971-976. Editor(s): Geertman, Rob M. Elsevier Science B.V.: Amsterdam, Neth. (English) 2000. CODEN: 69AELQ.

AB The double **fortification** of salt with iron and **iodine** for simultaneous prevention of iron deficiency anemia and **iodine** deficiency disorders has been a goal of researchers for at least 20 yr. The major problem is the interaction between **iodine** and iron which results in a loss of **iodine.** Stable double-fortified salt can be achieved with high-purity salt maintained in good packaging using ferrous fumarate and potassium iodide in the presence of a stabilizer. For use with impure salts in high humidity conditions, the **iodine** must be protected by phys. or chemical means. The authors developed a microencapsulation technique that allows production of double-fortified salt stable for at least one year. The production technique and stability are discussed.

L7 ANSWER 23 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

2000:511573 Document No. 133:309342 Community trials with iron and **iodine** fortified salt (Double fortified salt). Brahmam, G. N. V.;

Nair, K. Madhavan; Laxmaiah, A.; Reddy, Ch. Gal; Ranganathan, S.; Rao, M. Vishnuvardhana; Naidu, A. Nadamuni; Vijayaraghavan, K.; Sivakumar, B.; Krishnaswamy, Kamala; Sastry, J. Gowrinath; Mohan Ram, M.; Rao, N. Pralhad; Reddy, Vinodini (Indian Council of Medical Research, National Institute of Nutrition, Hyderabad, 500 007, India). World Salt Symposium, 8th, The Hague, Netherlands, May 7-11, 2000, Volume 2, 955-960. Editor(s): Geertman, Rob M. Elsevier Science B.V.: Amsterdam, Neth. (English) 2000. CODEN: 69AELQ.

AB Iron deficiency anemia (IDA) and **iodine** deficiency disorders (IDD) co-existing in many parts of India, are two major micronutrient deficiency diseases of public health significance. The National Institute of Nutrition has successfully developed the technol. of **fortification** of salt with **iodine** and iron (DFS). The laboratory studies have confirmed stability, bioavailability, and bio-effect. Two community-based trials with DFS were carried out for two years, one in a tribal community where IDA and IDD co-exist, followed by the other among children in residential schools. Both these studies revealed the feasibility of large-scale production, distribution and stability of DFS and its acceptability by the community. No untoward effects were observed on consumption of DFS, there by establishing its safety. The consumption of DFS had significant pos. impact on **iodine** nutriture of the community. Although the results on the impact on Hb status were not uniform in all the age/sex groups, the DFS supplementation in the residential schools had significant impact in preventing the decline and improving the Hb levels.

L7 ANSWER 24 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1999:795433 Document No. 132:11815 Method for the **iodine** **fortification** of eggs. Suvanprakorn, Pichit; Tanasugarn, Lerson; Limahksohn, Anusig; Sinawat, Sangsom; Vuthipongse, Prakrom (Biofile Corporation, Thailand). Eur. Pat. Appl. EP 963708 A1 19991215, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-303898 19990519. PRIORITY: US 1998-81494 19980519.

AB This invention relates to the method of non-invasively fortifying eggs with **iodine** as a dietary supplement without compromising the structural integrity of the egg. The eggs are placed in a solution comprising iodide or iodate salts of alkali or alkaline earth metals at an effective concentration for a duration of between a few seconds to a few days. **Iodine** then passes through the egg shell to the interior of the egg until an adequate internal **iodine** concentration of iodide or iodate salts is produced.

L7 ANSWER 25 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1999:571325 Document No. 131:271208 **Iodine** and zinc, but not selenium and copper, deficiency exists in a male Turkish population with endemic goiter. Ozata, Metin; Salk, Murat; Aydin, Ahmet; Sayin, Savas; Oktenli, Cagatay; Beyhan, Zeynel; Isimer, Askin; Ozdemir, I. Caglayan (Departments of Endocrinology and Metabolism, Gulhane School of Medicine, Ankara-Etlik, 06018, Turk.). Biological Trace Element Research, 69(3), 211-216 (English) 1999. CODEN: BTERDG. ISSN: 0163-4984. Publisher: Humana Press Inc..

AB Although endemic goiter has a high prevalence in Turkey, little is known about urinary concns. of I and blood plasma concns. of Se, Cu, and Zn in these patients. We studied 140 men with endemic goiter (mean age 22.2±0.19 yr) and 140 healthy men (mean age 21.8±0.28 yr). Daily urinary **iodine** excretion was determined by a iodide-selective electrode. Plasma Se, Zn, and Cu levels were determined by atomic absorption spectrometry. The urinary **iodine** excretion was lower in the patient group (38.7±2.26 μg/day) than in controls (50.73±2.56 μg/day). Plasma Zn concns. were also lower in the patient group (1.04±0.03 μg/mL) than in controls (1.16±0.02 μg/mL). No significant difference was found in Se and Cu concns. between the patient and control groups. Thus, a moderate I deficiency exists in both patients with endemic goiter and control subjects, which indicates the importance

of I deficiency in the etiol. and pathogenesis of endemic goiter in Turkey. Zn deficiency may also contribute to the pathogenesis of endemic goiter. Se and Cu do not seem to have any role in endemic goiter in Turkey. A community-based I **fortification** program may resolve this problem; it also can prevent the contributing effects of other element deficiencies that occur when **iodine** deficiency is the prevailing factor.

L7 ANSWER 26 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1999:364113 Document No. 131:87227 Effect of iron-, **iodine**-, and β-carotene-fortified biscuits on the micronutrient status of primary school children: a randomized controlled trial. [Erratum to document cited in CA130:324576]. Van Stuijvenberg, M. Elizabeth; Kvalsvig, Jane D.; Faber, Mieke; Kruger, Marita; Kenoyer, Diane G.; Benade, A. J. Spinnler (Nation Research Program Nutritional Intervention, MRC, Tygerberg, 7505, S. Afr.). American Journal of Clinical Nutrition, 69(6), 1294 (English) 1999. CODEN: AJCNAC. ISSN: 0002-9165. Publisher: American Society for Clinical Nutrition.
AB The last sentence of the Results section of the Abstract should read as follows: "The intervention had no effect on anthropometric status.". The Conclusions section of the Abstract should read as follows: "Fortified biscuits resulted in a significant improvement in the micronutrient status of primary school children from a poor rural community and also appeared to have a favorable effect on morbidity and cognitive function.".

L7 ANSWER 27 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1999:171434 Document No. 130:324576 Effect of iron-, **iodine**-, and β-carotene-fortified biscuits on the micronutrient status of primary school children: a randomized controlled trial. Van Stuijvenberg, M. Elizabeth; Kvalsvig, Jane D.; Faber, Mieke; Kruger, Marita; Kenoyer, Diane G.; Benade, A. J. Spinnler (National Research Program for Nutritional Intervention, MRC, Tygerberg, 7505, S. Afr.). American Journal of Clinical Nutrition, 69(3), 497-503 (English) 1999. CODEN: AJCNAC. ISSN: 0002-9165. Publisher: American Society for Clinical Nutrition.
AB Deficiencies of iron, **iodine**, and vitamin A can affect the mental development and learning ability of school children. The effects of micronutrient-fortified biscuits on the micronutrient status of primary school children were studied. The micronutrient status was assessed in 115 children aged 6-11 yr before and after consumption of biscuits fortified with iron (ferrous fumarate), **iodine** (potassium iodate), and β-carotene for 43 wk over a 12-mo period and was compared with controls (n = 113) who consumed nonfortified biscuits. Cognitive functions, growth, and morbidity were assessed as secondary outcomes. There was a between-group treatment effect on blood serum retinol, ferritin, iron and transferrin saturation, blood Hb and hematocrit, and on urinary **iodine**. The prevalence of low serum retinol concns. (<0.70 μM) decreased from 39.1 to 12.2%, of low serum ferritin concns. (<20 μg/L) from 27.8 to 13.9%, of anemia (Hb <120 g/L) from 29.6 to 15.6%, and of low urinary **iodine** concns. (<100 μg/L) from 97.5 to 5.4%. There was a between-group treatment effect in cognitive functions with the digit span forward task (short-term memory). Fewer school-days were missed in the intervention than in the control group because of respiratory and diarrheal illnesses. The intervention had no effect on the morbidity and cognitive functions. Thus, fortified biscuits improved the micronutrient status of primary school children from a poor rural community and appeared to have a favorable effect on anthropometric indexes.

L7 ANSWER 28 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1999:67979 Document No. 130:94843 Thyroid function in a population with extra **iodine** intake. Michaud, Patricio Ch.; Tellez, Rafael T. (Servicio de Medicina, Seccion Endocrinologia, Hospital Dr. Sotero del Rio, Santiago, Chile). Revista Medica de Chile, 126(2), 177-182 (Spanish) 1998. CODEN: RMCHAW. ISSN: 0034-9887. Publisher: Sociedad Medica de Santiago.

AB After 20 yr of **iodine** salt **fortification**, the prevalence of goiter has decreased in the Central Chile rural area of Pirque. In this area, equipment has been installed to add 0.5 mg elemental **iodine** per L drinking water. The thyroid function and urinary **iodine** excretion were studied in 134 local children aged 6-12 yr after 2 yr of extra **iodine** intake. In 56 children morning urine samples were obtained to measure **iodine** excretion. In 45 children without goiter, blood samples were drawn to measure TSH and thyroxin levels. Nine children (7%) had diffuse goiter. The median urinary **iodine** excretion was 158 μg/dL. Blood serum thyroxin and TSH levels were within normal limits (8.4±1.1 μg/dL and 2.2±1.5 μU/mL, resp.). During the period of **iodine** water supplementation there were 47 births in the area. All newborns had normal TSH values and none had goiter. Comparison of the present data with data from the period before water iodination (when the prevalence of goiter was 9.6% and mean urinary **iodine** excretion was 57.6 μg/dL) showed that the extra **iodine** intake in this rural population has not caused any addnl. thyroid problems.

L7 ANSWER 29 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1999:57560 Document No. 130:209149 Iron is well absorbed by healthy adults after ingestion of double-fortified (iron and dextran-coated **iodine**) table salt and urinary **iodine** excretion is unaffected. Sattarzadeh, Masoud; Zlotkin, Stanley H. (Departments of Paediatrics and of Nutritional Sciences, University of Toronto, Toronto, ON, M5G 1X8, Can.). Journal of Nutrition, 129(1), 117-121 (English) 1999. CODEN: JONUAI. ISSN: 0022-3166. Publisher: American Society for Nutritional Sciences.

AB Table salt **fortification** with I and Fe could be useful in areas in which anemia and goiter coexist. Interactions between the two minerals have prevented their simultaneous use as food fortificants. A method has been developed to coat I with dextran such that after spraying onto table salt, Fe and I do not interact. The absorption of Fe and the urinary excretion of I from table salt was studied in 16 humans (8 men, 8 women) given meals designed to inhibit or enhance Fe absorption. The subjects ingested Fe-enhancing and Fe-inhibiting meals containing 5 g table salt with 0.39 μmol dextran-coated I as KI and 1 mg Fe as ferrous fumarate labeled with 59Fe per g salt. The subjects also received a reference dose of 3 mg ferrous fumarate labeled with 59Fe to correct for interindividual variations in Fe absorption at a later date. Measured by whole-body counting, the Fe absorption from the Fe-enhancing meal (36.2±12.0% corrected; 13.5±13.8% uncorrected) was higher than from the Fe-inhibiting meal (7.4±11.3% corrected; 4.0±8.4% uncorrected). The urinary I excretion at baseline and post-ingestion were not different (0.89±0.5 vs. 1.06±0.39 μM) and were within the normal range. Thus, Fe was well absorbed but influenced by the composition of the meal. Urinary I excretion was maintained in the normal range with dextran-coated **iodine.**

L7 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1998:770376 Document No. 130:152951 **Iodine** status of Austrian children and adolescents. Elmadfa, Ibrahim; Koenig, Jurgen S. (Institute of Nutrition, University of Vienna, Austria). Bibliotheca Nutritio et Dieta, 54(Role of Trace Elements for Health Promotion and Disease Prevention), 58-66 (English) 1998. CODEN: BNDSA3. ISSN: 0067-8198. Publisher: S. Karger AG.

AB **Iodine** deficiency is still relatively high in Austria, as observed in relatively high incidence of low **iodine** excretion according to WHO classification. There has been recent improvement of **iodine** status with increased salt **fortification** with 20 mb KI/kg salt since 1990, and other ways of improving the **iodine** status in Austria are recommended, e.g. higher consumption of **iodine**-rich foods such as marine fish and reduction of factors limiting **iodine** bioavailability such as humic acids.

L7 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1998:770375 Document No. 130:152926 Improvement of trace element status through food **fortification**: technological, biological and health aspects. Hurrell, Richard F. (Laboratory for Human Nutrition, ETH, Zurich, Switz.). Bibliotheca Nutritio et Dieta, 54(Role of Trace Elements for Health Promotion and Disease Prevention), 40-57 (English) 1998. CODEN: BNDSA3. ISSN: 0067-8198. Publisher: S. Karger AG.
AB A review with 85 refs. on **fortification** of basic and infant foods with I and Fe, including the types of compds. used and bioavailability, organoleptic and other tech. considerations.

L7 ANSWER 32 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1998:762707 Document No. 129:342986 Bioeffect and safety of long-term feeding of common salt fortified with iron and **iodine** (double fortified salt) in rat. [Erratum to document cited in CA128:101429]. Nair, K. Madhavan; Sesikeran, B.; Ranganathan, S.; Sivakumar, B. (National Institute of Nutrition, ICMR, Hyderabad, 500 007, India). Nutrition Research (New York), 18(7), 1319 (English) 1998. CODEN: NTRSDC. ISSN: 0271-5317. Publisher: Elsevier Science Inc..
AB The footnote to Table 1 should read as follows: * IFS contained: common salt 1 kg; FeSO4.7H2O 5 g; and DFS contained addnl. KIO3 50 mg and SHMP 10 g.

L7 ANSWER 33 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1998:591472 Document No. 129:302002 Determination of discretionary salt intake in rural Guatemala and Benin to determine the **iodine** **fortification** of salt required to control **iodine** deficiency disorders: studies using lithium-labeled salt. Melse-Boonstra, Alida; Rozendaal, Marja; Rexwinkel, Henny; Gerichhausen, Monique J. W.; Van Den Briel, Tina; Bulux, Jesus; Solomons, Noel W.; West, Clive E. (Division of Human Nutrition and Epidemiology, Wageningen Agricultural Univ., Wageningen, Neth.). American Journal of Clinical Nutrition, 68(3), 636-641 (English) 1998. CODEN: AJCNAC. ISSN: 0002-9165. Publisher: American Society for Clinical Nutrition.
AB The use of discretionary salt, which is salt added during cooking and at the table, as a suitable vehicle for **iodine** intake was assessed by measuring salt consumption using the lithium-marker technique in rural areas of Guatemala and Benin. In both countries, we studied boys aged 6-12 yr and their mothers. Subjects used lithium-labeled salt after all unlabeled salt was removed from their households. In Guatemala, 24-h urine samples for 9 mother-son pairs were collected at baseline and on days 7, 8, and 9 during the use of lithium-labeled salt. Total maternal salt intake averaged 5.2 ± 1.7 g/d (.hivin.x ± SD), of which 77 ± 24% came from discretionary sources, whereas Guatemalan boys consumed 1.8 ± 0.6 g salt/d, of which 72 ± 12% came from discretionary sources. In Benin, urine collection from 13 mother-son pairs took place at baseline and on days 5 and 7. Beninese mothers had a total salt intake of 9.0 ± 2.9 g/d and their sons had an intake of 5.7 ± 2.8 g/d; discretionary salt contributed 52 ± 14% and 50 ± 13%, resp., of total salt consumed. Therefore, **fortification** of household salt appears to be an appropriate method of controlling **iodine** deficiency in both countries, although **fortification** of other salt sources could be considered in Benin.

L7 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1997:791655 Document No. 128:101429 Bioeffect and safety of long-term feeding of common salt fortified with iron and **iodine** (double fortified salt) in rat. Nair, K. Madhavan; Sesikeran, B.; Ranganathan, S.; Sivakumar, B. (National Institute of Nutrition, ICMR, Hyderabad, 500 007, India). Nutrition Research (New York), 18(1), 121-129 (English) 1998. CODEN: NTRSDC. ISSN: 0271-5317. Publisher: Elsevier Science Inc..
AB A doubly fortified salt (DFS) formulation developed at NIN as a public health measure for combating iron deficiency anemia and **iodine** deficiency disorders was evaluated for its efficacy and safety in rats. The Hb regenerating ability of a diet with DFS (1000 ppm Fe, 30 ppm

iodine, and 1% of sodium hexametaphosphate as stabilizer) was compared to that of diets with iron-fortified salt (IFS, 1000 ppm Fe) and unfortified salt using a depletion-repletion rat model. The safety and long-term feeding of DFS in relation to calcium and phosphorus metabolism was also tested. The amts. of Hb regenerated in both supplemented salt-fed groups (DFS: 13.0 ± 1.4, IFS: 11.7 ± 1.4 g/dL) were higher than in the nonsupplemented group (7.6 ± 4.0 g/dL) at the end of 4 wk. An insignificant increase in the excretion of **iodine** was seen in DFS-fed group (5.2 ± 5.2 μg I/day) compared to IFS-fed group (1.3 ± 0.45 μg I/day) at the end of 9 mo. Both groups had comparable Hb levels (15 g/dL) and liver iron content (73 μg Fe/g). Blood serum alkaline phosphatase (164 ± 6.7 vs. 132 ± 25.2 IU/L) and calcium (10.1 ± 0.6 vs. 10.2 ± 0.9 mg/dL) and urinary phosphate (12.1 ± 4.2 vs. 11.4 ± 2.5 mg/day), calcium (5.4 ± 3.2 vs. 5.1 ± 1.9 mg/day) and creatinine (9.3 ± 2.3 vs. 8.3 ± 1.5 mg/day) were similar in DFS and IFS groups at the end of 9 mo of feeding the resp. diets. There was a significant increase in blood serum phosphate (11.4 ± 0.7 vs. 7.2 ± 0.7 mg/dL) in the DFS-fed group compared to the IFS-fed controls. Whole body x-ray of the DFS and control groups suggested no gross bone abnormality. Histopathol. examination of major organs did not indicate any differences between the two groups. Thus, the study revealed that the iron provided via DFS is bioavailable. Sodium hexametaphosphate per se had no effect on calcium and phosphorus metabolism, except for an increase in serum phosphorus, the significance of which is not known. All other indicators tested showed no evidence of any toxicity from long-term consumption of DFS.

L7 ANSWER 35 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1997:788347 Neonatal TSH screening. An instrument of **iodine** supplementation monitoring in Bulgaria in comparison to Berlin. A preliminary report. Stoeva, I.; Peneva, L.; Grigorova, R.; Vassileva, B.; Brumm, H.; Grueters, A. (Dep. Endocrinology Diabetes, Children's Hospital, Univ. Sofia, Sofia, Bulg.). Experimental and Clinical Endocrinology & Diabetes, 105(Suppl.4), 51-54 (English) 1997. CODEN: ECEDFQ. ISSN: 0947-7349. Publisher: Johann Ambrosius Barth.

AB The challenge to eradicate **iodine** deficiency disorders (IDD) by the year 2000 worldwide will have pos. consequences for more than 20 million people suffering from IDD. This is the main and common goal for the developing but also for a lot the developed countries. Sensitive tools like neonatal thyroid screening (NTS) can be used in order to make changes in **iodine** supplementation more transparent and to have a dynamic target oriented approach. The comparison between six districts in Bulgaria and Berlin revealed despite of some pos. changes after the **fortification** of the **iodine** supplementation program still existing **iodine** deficiency in Bulgaria which is more profound than in Berlin in 1990. The shift to higher TSH-values in the Black-Sea region, classified by goiter-prevalence in 1956 as non-endemic for **iodine** deficiency, needs further investigation. Besides of **iodine** deficiency an influence of **iodine**-containing disinfectants and/or goitrogens is possible.

L7 ANSWER 36 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1997:154337 Document No. 126:211395 Salt: an ineffective vehicle for **iodine** delivery to young children in rural Sarawak. Foo, L.C.; Zainab, T.; Nafikudin, M.; Letchuman, G.R. (Institute for Medical Research, Kuala Lumpur, Malay.). Annales d'Endocrinologie, 57(6), 470-475 (English) 1996. CODEN: ANENAG. ISSN: 0003-4266. Publisher: Masson.

AB The urinary **iodine** excretions of women (15-40 yr) and young children (≤ 6 y) from two longhouse villages in the **iodine** - deficient district of Lubok Antu, Sarawak, were compared. One longhouse (Mengkak) was provided with freshly produced iodized salt every two months (one kg per family) while the other (Menjiling) was provided with iodized water via **fortification** of the village piped-water supply. Spot urines were collected for **iodine** determination at baseline and at 6 and 12 mo after the start of the study. Salt and water samples were collected

at monthly intervals. Goiter assessment was performed on the women at the start and end of the one-year study. The mean **iodine** concns. in the salt samples from Mengkak and Menjiling were, resp., 47.1 ± 9.7 mg/kg (n = 60) and 0.8 ± 3.4 mg/kg (n = 60) while the mean **iodine** concentration in the water samples from Menjiling was 138.6 ± 43.2 μg/L (n = 24); **iodine** could not be detected in the water samples from Mengkak. There were significant and sustained increases in median urinary **iodine** excretions of both women and young children in Menjiling; in Mengkak, however, significant and sustained increases in median urinary **iodine** excretions were observed only in women while the median urinary **iodine** excretions of children remained essentially unchanged throughout the study period. Goiter prevalences in the women were reduced in both longhouses. The above observations reveal the inadequacy of iodized salt as a vehicle for **iodine** delivery to young rural Sarawakian children and indicate the need for other means of delivering supplemental **iodine** to this age group in areas where salt iodization is the only strategy for IDD control. In contrast, iodization of village water supply by itself is adequate in delivering **iodine** uniformly to the whole community.

L7 ANSWER 37 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1995:790284 Document No. 123:226689 The use of sugar as a vehicle for **iodine fortification** in endemic **iodine** deficiency. Eltom, Mohamed; Elnagar, Babikir; Sulieman, El Agib; Karlsson, F. Anders; Van Thi, Hong V.; Bourdoux, Pierre; Gebre-Medhin, Mehari (Endocrine and Diabetes Centre, Omdurman Teaching Hospital, Sudan). International Journal of Food Sciences and Nutrition, 46(3), 281-9 (English) 1995. CODEN: IJFNEH. ISSN: 0963-7486. Publisher: Carfax.

AB The use of sugar as a vehicle for I supplementation was explored in a study of I deficiency in the Sudan. A survey of sugar consumption was conducted and established a widespread and uniform intake of sugar in all ages with no differences among socio-economic groups. The daily intake among adults varied 48-78 g as examined in 5 different geog. areas in the country. Iodinated sugar was produced by addition to sugar solution prior to crystallization in an evapocrystallizer or sprayed on the conveyor of cured sugar before it entered the dryers. Subsequently, the iodinated sugar was given to members of 18 and 60 families in a mildly (urinary I <5.1 μg/dL) and moderately (urinary I <3 μg/dL) I-deficient areas, resp., over a 1-mo and a 6-mo period, resp. In both tests, improvements were recorded, i.e., the rates of goiter decreased, urinary I levels increased significantly (from 5.1 to 14.4 μg/dL and from 3 to 9.8 μg/dL, resp.,) and thyroid hormones values rose. No side effects were noted. The results indicate that **fortification** of sugar with I may serve as a new alternative approach in attempts to eradicate I deficiency-related disorders in endemic areas.

L7 ANSWER 38 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1995:572849 Document No. 122:313506 Calculated **iodine** intake before and after simulated iodization (Dutch Nutrition Surveillance System). Brussaard, J. H.; Hulshof, K. F. A. M.; Loewik, M. R. H. (Dep. Human Nutrition, TNO Nutrition Food Research, Zeist, Neth.). Annals of Nutrition & Metabolism, 39(2), 85-94 (English) 1995. CODEN: ANUMDS. ISSN: 0250-6807. Publisher: Karger.

AB To estimate the effect of possible goiter prophylactic measures on the intake of **iodine** among population groups, simulation studies, based on the first Dutch National Food Consumption Survey, were carried out. **Iodine** intake figures and prevalence of low intakes were calculated after fictively iodizing either bread, a combination of industrial products, milk and dairy products (without cheese) or margarine and shortenings. In addition, the effect of iodizing both bread and cheese or bread + biscuits + rusks was calculated The simulated iodization of different products increased mean calculated **iodine** intakes by up to 45% and gave a reduction of 60-90% in the prevalence of **iodine** intakes below 100 μg/day. The maximum acceptable intake of 1 mg **iodine** per

day was never reached by any subject (average of 2 days). It is concluded that it is possible to increase substantially the mean **iodine** intake without a clear risk of exceeding the maximum acceptable daily oral **iodine** intake.

L7 ANSWER 39 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1991:205785 Document No. 114:205785 Iron, zinc, copper, manganese, selenium, and **iodine** in foods from the United States Total Diet Study. Pennington, J. A. T.; Young, B. (Div. Nutr., Food Drug Adm., Washington, DC, 20204, USA). Journal of Food Composition and Analysis, 3(2), 166-84 (English) 1990. CODEN: JFCAEE. ISSN: 0889-1575.
AB Data on the concns. of Fe, Zn, Cu, Mn, Se, and I in the 234 foods of the United States Total Diet Study from 1982 to 1989 were summarized per 100 g and per typical serving portion. Foods highest in these elements per serving were ready-to-eat cereals, mixed dishes, and meats for Fe; meat, mixed dishes, and ready-to-eat cereals for Zn; meat, nuts, mixed dishes, and beans/peas for Cu; ready-to-eat cereals, nuts, and beans/peas for Mn; fish, meat, poultry, and mixed dishes for Se; and ready-to-eat cereals, dairy desserts, mixed dishes, fish, and dairy products for I. Relative standard deviations for the micronutrients in the top 20 food sources per serving averaged 28% for Fe, 20% for Zn, 26% for Cu, 25% for Mn, 32% for Se, and 104% for I. In addition to genetic, environmental, processing, and analytic variables, causes for variability in foods most likely include inconsistent and varying levels of **fortification** with and food additives containing micronutrients.

L7 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1987:4016 Document No. 106:4016 **Iodine** distribution in the sphagnum moss from Byelorussian peat deposits. Naumova, G. V.; Kosonogova, L. V.; Chuduk, V. N. (Inst. Torfa, Minsk, USSR). Torfyanaya Promyshlennost (9), 27-8 (Russian) 1986. CODEN: TORPAV. ISSN: 0040-9472.
AB The I contents of sphagnum mosses from various locations in Byelorussia were determined and the results tabulated. Supplementation of cattle feed (beet pulp, hay, or straw) with 1 kg of the moss daily would supply the animals with 2 mg I/day.

L7 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1985:94473 Document No. 102:94473 **Fortification** of salt and other vehicles with iron and **iodine** compounds for the prevention of iron deficiency anemia and **iodine** deficiency goiter. Pleehachinda, Rudee; Pattanachak, Chaweewan; Chongchirasiri, Siriporn; Suwanik, Romsai; Pattanachak, Supong; Tantawiroon, Malulee; Sritongkul, Napamon; Sieng Jaew, Sununta; Putraseranee, Nucharee; et al. (Fac. Med., Siriraj Hosp., Thailand). Journal of the National Research Council of Thailand, 17(1), 77-90 (Thai) 1985. CODEN: JRCTAF. ISSN: 0028-0011.
AB NaCl was supplemented with KIO3 to yield an I concentration of 1:40,000 with no objectionable changes in taste or color. Similarly, NaCl could be supplemented with FeSO4 at 0.5 mg Fe/g provided that Na hexametaphosphate and NaHSO4 were also added to prevent Fe oxidation and enhance its intestinal absorption. Fish sauce and soy sauce were supplemented with Fe at 0.5-1 mg/mL as ferric Na EDTA; 0.75 mL HOAc/750 mL was added to prevent precipitation in fish sauce. Soy sauce was supplemented with both KIO3 and EDTA-complexed Fe with no problems; both compds. could be added to fish sauce simultaneously when HOAc was added.

L7 ANSWER 42 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1980:424992 Document No. 93:24992 **Iodine fortification** of milk by high-**iodine** cow feed. Ishikawa, Tadashi; Kanzaki, Hiroshi (Japan). Jpn. Kokai Tokkyo Koho JP 55037113 19800315 Showa, 2 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1978-108170 19780905.
AB I-enriched milk is produced by giving cows feed containing >20 mg I/kg. Thus, cows were fed with a feed containing 120 mg Ca(IO3)2/kg for 10 days. The I content of the milk was 2430 μg/L compared to 35 μg/L for control milk.

L7 ANSWER 43 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1980:109252 Document No. 92:109252 Iron and **iodine** **fortification** [of foods] in Thailand. Suwanik, Romsai (Siriraj Hosp., Mahidol Univ., Thailand). Journal of the National Research Council of Thailand, 12(2), 1-45 (Thai) 1979. CODEN: JRCTAF. ISSN: 0028-0011.
AB The spray-mixing process used to fortify salt with KI gives uniform distribution of I and the salt can be stored for a long period without significant I loss. Trials with this I-fortified salt in a hyperendemic goiter area in northern Thailand with children 5-15 yr old decreased the disease from 84.4% to almost zero within 6 yr. FeSO4, Na hexametaphosphate, and Na HSO4 (5:4:3) were added to 1000 parts of salt to give a fortified product containing 1 mg Fe/g of salt. The taste and color of the salt was not altered, storage for up to 15 mo did not result in a significant reduction in Fe content, and the distribution of the Fe in the salt was constant Absorption studies of fortified salt added to the Thai farmer diet of rice, vegetables, and fish indicated good availability of the Fe, and that the salt would supply sufficient Fe to meet the daily requirement.

L7 ANSWER 44 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1979:609511 Document No. 91:209511 The design of the machine for the **fortification** of salt with iron and **iodine** by the spray mixing method. Suwanik, Romsai (Fac. Med., Siriraj Hosp., Bangkok, 7, Thailand). Journal of the Medical Association of Thailand, 62(Suppl. 1), 16-20 (English) 1979. CODEN: JMTHBU. ISSN: 0025-7036.
AB Coarse-grain salt of local origin (Thailand) was homogeneously fortified with Fe compds. (FeSO4.7H2O, or Fe(III) Na EDTA, or ferric ammonium citrate) and KIO3 by spraying solns. containing these and mixing by gravity combined with inclined screw conveyors. The capacity of the prototype was 10 tons/day. Preliminary washing by passage through saturated NaCl solution removed dust and hygroscopic impurities and improved NaCl sorptive properties for the Fe and I salts.

L7 ANSWER 45 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1979:609510 Document No. 91:209510 **Fortification** of common salt with iron and **iodine** compounds. Suwanik, Romsai (Fac. Med., Siriraj Hosp., Bangkok, 7, Thailand). Journal of the Medical Association of Thailand, 62(Suppl. 1), 6-11 (English) 1979. CODEN: JMTHBU. ISSN: 0025-7036.
AB Expts. on mixing common salt with FeSO4.7H2O, KIO3, and stabilizers were carried out. Salt fortified with appropriate proportions of Na hexametaphosphate (SHMP) and NaHSO4 showed no change in color or smell or taste before and after use in cooking, and storage of this salt for up to 19 mo did not result in any appreciable loss of Fe. The salt had good Fe availability. The importance of spray mixing for the even distribution of the Fe compds. and the KIO3 was emphasized. Fish sauce and fish condiment could be effectively fortified with ferric ammonium citrate or ferric sodium EDTA.

L7 ANSWER 46 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1979:418376 Document No. 91:18376 Plants and foods of plant origin. Mineral content of food as produced compared with that of food as consumed. Forbes, Allan L. (Div. Nutr., Food Drug Adm., Washington, DC, USA). Geochem. Environ., Volume 3, 70-1, 77. NAS: Washington, D. C. (English) 1978. CODEN: 35POAP.
AB A review with 12 refs. discussing **fortification** of food with Fe and I.

L7 ANSWER 47 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN
1956:36863 Document No. 50:36863 Original Reference No. 50:7252e-i Effects of supplementing a calf ration with trace minerals, Aureomycin, and other dietary constituents as measured by growth and feed consumption. Jones, W. G.; Bartley, E. E.; Swenson, M. J.; Underbjerg, G. K. L.; Atkeson, F. W.; Fryer, H. C. (Kansas Agr. Expt. Sta., Manhattan). Journal of Dairy

Science, 39, 188-95 (Unavailable) 1956. CODEN: JDSCAE. ISSN: 0022-0302.

AB Twenty-seven dairy calves were divided into 3 ration groups. Calves in Group I received a standard basal ration. Calves in Group II received the basal ration plus trace minerals (Fe, Cu, Co, I, Mn, and Zn). Calves in Group III received the basal ration plus these trace minerals, and, in addition, major minerals (Ca, P, Mg, and NaCl), vitamins (A, B-complex, C, D, E, K), and Aureomycin. The duration of the experiment was from birth to 24 weeks of age. During the first 7 weeks after birth the calves in Groups II and III grew at a significantly faster rate than those in Group I (basal), but it was not until the 8th week that the spread in average size among the groups was statistically significant. After 8 weeks, calves in Group II continued to average larger than those in Group I (basal) but comparatively there was a gradually diminishing growth rate of calves in Group II. At 24 weeks there was practically no difference in the size of the calves in these 2 groups. Calves in Group III continued to grow at a significantly faster rate than those in either of the 2 other groups and at 24 weeks were decidedly larger than the calves in Groups I and II. Thus, the addition of selected trace minerals to the basal ration resulted in improved size, but there was a comparative trend to slow up in growth rate by calves in Group II after 8 weeks of life. Further **fortification** of the basal ration by the addition not only of the trace minerals but also major minerals, vitamins, and Aureomycin resulted in further improvement in rate of growth and greater average size for calves in this group than for either of the 2 other groups. Small differences resulted among the groups in feed consumption and efficiency of gain. However, none of these differences was statistically significant.

L7 ANSWER 48 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1954:37235 Document No. 48:37235 Original Reference No. 48:6660d-f
Venezuelan marine salts-their use in the formulation of iodized salt. Bianchi-Cayama, Luis Arch. venezolanos nutric., 3, 433-42 (Unavailable) 1952.

AB In an attempt to fortify table salt with KI, a study of the composition of 8 specimens of salt from different localities was undertaken. The samples have the following range of composition: insol. material, 0.06-0.47%; CaSO4, 0.63-3.46%; CaCl2, 0.01-0.04%; MgSO4, 0.09-1.95%; MgCl2, 0.11-1.85%; NaCl, 94.48-99.08%; Fe, 6.4-107.2 mg. %; and I, 0.035-0.470 mg. %. These figures are expressed on a dry basis. I was determined by the following procedure: 20 g. salt is dissolved in 100 ml. distilled H2O, the solution filtered, and the residue washed. The filtrate and washing are neutralized with H3PO4 in the presence of methyl orange; a 1-ml. excess of H3PO4 is added, followed by the addition of 1 ml. Br-saturated H2O. The mixture is boiled for 10 min. After cooling, 1 ml. H3PO4 and 5 ml. 10% KI are added. Reaction is allowed to proceed in the dark for 10 min. The liberated I is then titrated with 0.001N Na2S2O3. Preliminary tests on the **fortification** of one of the marine salts tested showed poor stability of the KI after 1 yr.

L7 ANSWER 49 OF 49 CAPLUS COPYRIGHT 2004 ACS on STN

1943:42994 Document No. 37:42994 Original Reference No. 37:6776e
Iodine addition to drinking water supply in Holland. Meyer, Aug. F. GWF, das Gas- und Wasserfach, 84, 690 (Unavailable) 1941. CODEN: GAWFAN. ISSN: 0367-3839.

AB The supply, from deep wells, contained so little I that it was considered desirable to add KI at the rate of 1 kg. per day to an average of 2200 cu. m. of water. In Germany, I is not added to water supplies, but iodized salt is distributed in certain localities where water supply is low in I.

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	174.09	175.09